

APPENDIX L

ALASKA COMMUNICATIONS SYSTEMS WIRELESS	55
AT&T WIRELESS	57
CAPROCK CELLULAR.....	60
CAROLINA WEST WIRELESS	62
CELLULAR XL ASSOCIATES, L.P.	63
CINGULAR WIRELESS LLC.....	65
CORR WIRELESS COMMUNICATIONS, L.L.C.	68
ERICSSON INC.	69
FARMERS CELLULAR TELEPHONE, INC.	74
LEAP WIRELESS	76
MIDWEST WIRELESS HOLDING L.L.C.....	77
MOTOROLA	78
NEXTEL COMMUNICATIONS, INC.	80
NOKIA.....	82
NORTEL NETWORKS.....	84
PINE BELT CELLULAR, INC.	91
RURAL CELLULAR CORPORATION.....	93
SIEMENS	95
SONY ERICSSON MOBILE COMMUNICATIONS	96
SOUTHERN LINC	99
SPRINT PCS.....	100
TELECORP PCS	102
UNWIRED TELECOM.....	113
VOICESTREAM WIRELESS.....	114

Alaska Communications Systems Wireless
TTY Status Report
April 10 2002

Alaska Communications System Wireless consists of 3 Ericsson Switches offering TDMA digital and analog service in Anchorage, Fairbanks, Juneau, Sitka, Ketchikan and the Kenai Peninsula in the state of Alaska.

1. Network Infrastructure Software Development

ACS Wireless is contemplating the purchase of Ericsson's Version 7 software with the IS-823A patch for all three switches to insure compliance with the FCC's order for TTY deployment deadline

2. Handset Deployment and Testing Plans

ACS Wireless is relying on its handset vendors for the development and testing of TTY capable handsets. Once Ericsson and Nokia have IS-823 handsets, we will purchase these handsets and ACS Wireless will perform field tests.

3. Beta Testing and Lab Testing

ACS Wireless will rely on its switch vendor and handset vendors for beta testing and lab testing for conformance to TTY specifications.

4. Release and General Availability to Carriers of Network Software

Ericsson software is available as of 4th qtr 2001.

5. Availability to Carriers of Full Acceptance Test Units

Full acceptance tests depend on handset vendors schedule of IS-823 compatible units.

6. Efforts Towards Achieving Digital Wireless Solution Compatibility with Enhanced TTY Devices

Dependent on handset vendors for enhanced TTY devices.

7. Carrier Coordination of Testing with PSAP

ACS Wireless will coordinate testing with any PSAP that requests testing.

8. Carrier Testing Activities, Including Field Testing and Consumer End to End Testing

Field testing and consumer end to end testing will take place after vendor software has been installed and compatible handsets have been tested. We anticipate our testing activities to be complete before end of 2nd qtr 2002.

9. Retail Availability of Necessary Consumer Equipment

Retail availability will be implemented by ACS Wireless retail outlets when compatible handsets are ready for rollout.

10. Geographic Scope of Network Deployment

ACS Wireless will meet the June 30th 2002 deployment deadline with availability in all markets served by ACS Wireless in the state of Alaska.

Respectfully Submitted
Nicholas Miller
Wireless Operations Manager

AT&T Wireless
1st Quarter, 2002 TTY Progress Report

10 April, 2002

Please Note: AT&T Wireless' current network, supporting approximately 16 million customers in markets nationwide, operates on the TDMA (ANSI-136) air interface. The company is in the process of building a new network based upon the GSM air interface standard, for which AT&T Wireless is ensuring TTY compatibility per the FCC's regulations. Please note, however, that the overwhelming majority of the company's current customer base is supported by the TDMA network.

Network Infrastructure Software Development

TDMA Network: TTY software from all three of our network platform vendors is now Generally Available.

GSM Network: AT&T Wireless received revised TTY software for Nokia GSM transcoders during Q1, 2002.

Handset Development and Testing Plans

TDMA Handsets:

Motorola, Nokia, Sony/Ericsson: Lab testing of handsets from all three vendors continued in Q1, 2002.

GSM Handsets:

Motorola reports that they are planning to provide a TTY-capable GSM handset that should be available to our lab in Q2, 2002

Nokia reports that they are planning to provide a TTY-capable GSM handset that should be available to our lab in Q2, 2002

Sony/Ericsson provided a TTY-capable GSM handset to our lab in Q4, 2001

Beta and Lab Testing

AT&T Wireless has in place a full integration lab for Ericsson, Lucent, and Nortel TDMA infrastructure equipment. As of the date of this report, TTY software for Lucent R17.0, Nortel MTX-10, and Ericsson Version 8 has been loaded into test switches within the AT&T Wireless test lab for regression and TTY feature testing.

In addition to the TDMA lab, AT&T Wireless also has in place a GSM integration lab for Ericsson BSS, Nokia BSS, and Nortel MSC equipment. During Q1, 2002, AT&T Wireless installed software to support TTY in our Nokia BSS lab environment.

Release and General Availability to Carriers of Software

TDMA Network: All three of AT&T Wireless' TDMA network vendors have released their TIA/EIA IS-823A software for general availability as summarized below:

Ericsson's support of IS-823A in Version 8 radio software (which includes vocoder TTY support) should become generally available during Q2, 2002

Lucent integrated IS-823A support into 5ESS software release 5E15.1 BWM01-0008, and it became generally available in Q3, 2001. This TTY software was enabled in AT&T Wireless Lucent markets during Q1, 2002.

Nortel: Nortel supports IS-823A in MTX10, DSPM version EFRX10BR, which became generally available during Q1, 2002.

GSM Network: General availability of TTY-capable GSM network equipment for each of AT&T Wireless' BSS vendors is summarized below:

Ericsson's CTM node became generally available in Q1, 2002

Nokia's CTM software for network transcoders should be generally available in Q2, 2002

Nortel's revised software patch to GSM13, which is necessary to support trunk selection based on CTM indicator status (required to support the Ericsson E-CTM server) should become generally available in Q2, 2002

Availability to Carriers of Full Acceptance Test Units

TDMA Handsets: AT&T Wireless has obtained information from three TDMA (ANSI-136) handset vendors concerning the general availability (GA) of TTY-compatible handsets. The information obtained is summarized below:

Ericsson reports that they are planning to have an IS-823 handset available for GA in Q2, 2002

Nokia reports that they are planning to have an IS-823 handset available for GA in Q2, 2002

Motorola reports that they are planning to have an IS-823 handset available for GA in Q2, 2002

GSM Handsets: AT&T Wireless has obtained information from three GSM handset vendors concerning the general availability of CTM-capable handsets (as defined by 3GPP TS 26.226 and related standards). The information obtained from each vendor is summarized below:

Sony/Ericsson reports that they are planning to have a handset supporting CTM available for general availability in Q1, 2002

Motorola reports that they are planning to have a handset supporting CTM available for general availability in Q2, 2002

Nokia reports that they are planning to have a handset supporting CTM available for general availability in Q2, 2002

Carrier Testing Activities, Including Field Testing and Consumer End-to-End Testing

Industry-Standard IS-840 Audio Server:

AT&T Wireless configured a Wireless TTY audio server, which will allow a PSAP or PSAP vendor to validate the compatibility of their equipment against the IS-840 "Wireless TTY" standard. This audio server can be made available on a dial-up basis through the switched public network, and provides the caller with standardized streaming text which can be scored for errors using a reference file and the Lober & Walsh SCORE.EXE software. After developing this platform, AT&T Wireless will provide ATIS with the information necessary to set up such a server, which they plan to host.

February TTSI Inter-MSC Test Effort:

AT&T Wireless participated in the ATIS TTSI inter-MSC TTY test effort, which took place on 11 and 14 February. The AT&T Wireless lab network (using Lucent, Ericsson, or Nortel TDMA infrastructure equipment) was used to test against participating Motorola CDMA, Nortel CDMA, Ericsson GSM and Lucent TDMA networks around the country.

Nortel TDMA FOA Testing:

AT&T Wireless FOA tested the Nortel TTY support software in our Portland, Oregon TDMA market in early January, 2002.

Ericsson GSM FOA Testing:

AT&T Wireless conducted a FOA of Ericsson's E-CTM server in our Indianapolis market during March, 2002.

Retail Availability of Necessary Consumer Equipment

No new consumer equipment has become available for retail sale. AT&T Wireless continues to offer the Panasonic TDMA TTY-compatible handsets (models EB-TX310 and EB-TX320) in our retail stores.

Progress of TTY-Digital Deployment Solutions
CC Docket No. 94-102
1st Quarterly Report
April 10, 2001

#1 Network infrastructure software development:

Caprock Cellular utilizes Nortel Networks equipment to provide TDMA digital services in Texas RSA 4. A report from Nortel Networks states that development of software is complete, and product tests have been completed as well. Testing was limited to Panasonic prototype handset, as other equipment was not available during the test.

#2 Handset development and testing plans

Caprock Cellular must rely on handset vendors to develop the required handsets. When handsets are available testing can be performed with area PSAPs to insure compatibility.

#3 Beta testing and lab testing

Caprock Cellular must rely on Nortel Networks and handset vendors for initial conformance testing.

#4 Release and general availability to carriers of network infrastructure software

Nortel Networks has stated that the required software load, MTX10, will be generally available first quarter of 2002. MTX10 was deployed March 6, 2002.

#5 Availability to carriers to full acceptance test units

Nortel Networks plans to test and confirm the solution performance during the six-month extension allowed for this purpose.

**Caprock Cellular Limited Partnership
Progress of TTY-Digital Deployment Solutions
CC Docket No. 94-102 - 2nd Quarterly Report**

#6 Efforts toward achieving digital wireless solution capability with enhanced TTY devices.

The solution provided by the MTX10 software load addresses Baudot type messages only. Other capabilities may be included later, after standards are adopted.

#7 Carrier coordination of testing with PSAP

See response to item #2 above.

#8 Carrier testing activities, including field testing, consumer end-to-end testing, and other necessary tests.

Caprock Cellular will acquire compatible handset and test service.

#9 Retail availability of necessary consumer equipment

At this time it is unknown when handsets will be available.

#10 Geographic scope of network infrastructure deployment

The required software load for the cellular switch (MTX10) has been installed. See #4

North Carolina RSA 3 Cellular Telephone Company
d/b/a Carolina West Wireless
TTY Report
First Quarter 2002

Background

Carolina West Wireless uses TDMA technology
Infrastructure vendor is Nortel
Phone manufactures include Nokia, Motorola and Ericcison

Status

The MTX10 software has been deployed as scheduled. All of the software components relating to TTY testing have been verified.

Nokia has made a firm commitment on the model 6360 and should be in our inventory early second quarter. Motorola has made no firm commitment for delivery for the V60TI. Ericcson is still evaluating the TTY compatibility of its products and has not yet made the phones available to us.

Carolina West Wireless is in the process of scheduling testing to begin during the second quarter of 2002 using the Nokia 6360. Testing for the Motorola V60TI and Ericcson equipment will be scheduled for testing as soon as they are made available to us.

Carolina West Wireless continues to actively work with its vendors and the TTY Forum to ensure TTY availability as quickly as possible.

April 10, 2002

**Cellular XL Associates, L.P. TTY Status Report
First Quarter 2002**

Network Infrastructure Software Development

Cellular XL Associates, L.P. (Cellular XL) operates a Nortel Wireless 100 (W-100) hybrid wireless and wire line switch in its network. Nortel Networks has no TTY solution for the W-100 switch. In order to meet TTY requirements, Cellular XL and Nortel Networks have undertaken a project to split the wireless and wire line functionality into two separate switches – a DMS 100 wire line switch and a DMS-MTX wireless switch. Once both switches are in place, the DMS-MTX can be upgraded to the Nortel MTX10 software load required for proper TTY functionality. Due to the extensive nature of this upgrade, Nortel Networks has informed Cellular XL that it will be unable to complete the upgrade until 4th quarter 2002.

Handset Development and Testing Plans

Cellular XL must rely on handset vendors to provide this solution. We are working with our suppliers to acquire these units as soon as possible.

Beta Testing and Lab Testing

Cellular XL is in contact with handset manufacturers and with Nortel Networks and will be gathering information on handsets Nortel deems compatible with its switch. Once Cellular XL has this information from Nortel, it will acquire handsets and test for compatibility and quality assurance in its own network.

Release and General Availability to Carriers of Network Infrastructure Software

Please see Nortel Networks' 2002 First Quarter Status Report for release and general availability information.

Availability to carriers of full acceptance test unit

Cellular XL expects commitments from Nortel Networks to test the performance of their software solution prior to implementation

Efforts Toward Achieving Digital Wireless Solution Compatibility With Enhanced TTY Devices

Cellular XL is doing everything in its power to assure compatibility between its network, the TTY devices, the E911 system, and all other affected elements of this project. The primary goal of Cellular XL is to assure absolute quality of service to the end user.

Testing and Deployment Activities

In cooperation with the above mentioned network upgrades, Cellular XL plans to test and deploy full TTY functionality prior to December 31, 2002.

Carrier Coordination of Testing with PSAP

Cellular XL has excellent relationships with the PSAP's in its service area and intends to utilize that relationship to assure complete communication functionality between handsets and PSAP's.

Carrier Testing Activities, Including Field Testing, Consumer End-To-End Testing, and other Necessary Tests

Cellular XL is a small carrier operating in two RSA's in South Mississippi. Once handsets have been acquired and network TTY functionality is installed, Cellular XL will begin testing. Testing will involve primarily three groups: Cellular XL engineers and technicians, PSAP representatives, and consumers. The University of Southern Mississippi has an active program assisting hearing-impaired people in this area and is one of many resources that will be utilized as a source of consumer test subjects.

Retail Availability of Necessary Consumer Equipment

Cellular XL intends to make consumer equipment available through all of its normal retail and direct sales outlets.

Geographic Scope of Network Infrastructure Deployment

Cellular XL operates its network in two RSA's in South Mississippi: MS 10 and MS 11. These two RSA's consist of 12 counties. Cellular XL will deploy the TTY solution over its entire network within this operating area.

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April 8, 2002

To: TTY Forum

From: Susan Palmer and Ken Evans

**TTY Forum #21 Report
Cingular Wireless LLC**

Overview

Cingular Wireless LLC (Cingular) notes that progress with ATIS coordinated testing of the TTY solutions continues. Cingular has participated in this testing in GSM, CDMA and TDMA environments. The first testing of GSM technology was a cooperative venture conducted by ATIS in Cingular's California GSM market in February. This interoperability testing involved multiple carriers around the country and included all access technologies (GSM, TDMA and CDMA).

Results from testing from a mobile to mobile and mobile to landline environments indicate a total character error rate at an acceptable level -- less than 1%. However, testing with **some** PSAPs indicate an unacceptable character error rate. This is a serious problem. ATIS has identified over 36 vendors of PSAP equipment including TTYs, software TTYs and PSAP software that can impact total character error rate. Research is on going to determine the extent of the problem and to identify solutions.

Manufacturers have provided TTY compatible handsets for testing and as of this date, Cingular has tested handsets from all three of its' handset vendors with good results. However, these have been in limited numbers and availability of handsets is still a concern for commercial launch.

Cingular is conducting testing of the TTY solution with deaf and hard of hearing TTY users. This testing is being conducted to identify usability issues and to confirm that the necessary network, handset and customer interface issues are in place.

ERICSSON

TMDA: The TTY software was given general availability (GA) status on December 1, 2001. On March 4, 2002, Cingular received a software patch from Ericsson. This patch is expected to help resolve the error rate issue that is seen when calling certain PSAP equipment. It was loaded into one of our commercial switches on March 11 for evaluation. Initial results indicate the patch has resolved the error rate issue with one PSAP vendor. However, testing will be required with all know PSAP vendors to insure compatibility. Deployment of TTY software

in the Ericsson switches in our network will be completed in April 2002. The June 30, 2002 deployment requirement is on track.

GSM: Testing has been completed in our Pleasanton Laboratory. A first office application (FOA) was successfully completed on January 19, 2002 in Pleasanton, California. Successful interoperability testing was conducted with TDMA and CDMA technology on this switch in February 2002. Installation of the TTY functionality will complete in late April 2002. The June 30, 2002 deployment requirement is on track.

NORTEL

GSM: Nortel GSM continues to be an area of concern. Testing is scheduled for May 6, 2002, with a GA date of May 17, 2002. This is only six weeks prior to June 30, 2002 when the FCC requires that we have TTY implemented. Unforeseen problems identified in testing could place our ability to meet the June deadline in jeopardy. If Cingular does not receive the upgrades from Nortel as scheduled and is unable to conduct testing as scheduled, it will not be possible for Cingular to meet the June deadline in these markets.

TDMA: Cingular has the necessary software for the TTY solution. However, this software cannot be used until Cingular completes planned switch upgrades from "MTX - 9" to "MTX - 10". This upgrade is scheduled to complete in early April 2002.

LUCENT

The Lucent TTY solution has been installed in all Lucent switches and testing to date has yielded good results. We have met the December 31, 2001 date and are on track for the June 30, 2002 date.

INTEROPERABILITY TESTS

There have been three interoperability testing events conducted by the industry and coordinated by the TTSI. GSM, TDMA and CDMA have been tested with the results being good for most scenarios. However, testing with certain PSAP equipment has yielded unusually high character error rates. Through ATIS coordination, the industry is working with the vendors of this equipment to resolve this issue. However, little time is available to identify and resolve problems and roll out the solution prior to the June 30, 2002 date. The success seen in mobile-to-mobile and mobile to landline testing indicates that this TTY solution could provide access to a mobile conversational mode of communications for hearing impaired users. It will also lead to access to other digital modes of communications such as SMS and wireless Web. The industry is examining ways to introduce the conversational mode by June 30th, and continuing work (as needed) on resolution of the PSAP issue.

USER TESTING

Cingular is working with the Rehabilitation Engineering Research Center at Gallaudet University, a nationally recognized Deaf research organization specializing in Telecommunications access, to insure that the TTY solution is viable. These evaluations involve deaf individuals using the TTY products on a commercial switch to evaluate the network performance; usability of the interface to the wireless handset and the TTY terminal; and the customer service interface provided via TTY and TRS. Information obtained will be shared with the industry to insure a smooth service launch on or before June 30, 2002.

Corr Wireless Communications, L.L.C.

Corr Wireless Communications, L.L.C. (Corr Wireless) is working with vendors to insure compliance with the FCC implementation deadline.

Two phone vendors (Nokia and Panasonic) are marketing phones that purport to be TTY capable. Corr Wireless attempted to test the Panasonic phone with the Blount County, Alabama PSAP but the PSAP's TTY device was not wireless phone capable. Corr Wireless has since ordered a wireless phone capable TTY device and expects delivery within the next week. Testing will commence upon delivery of the device.

Corr Wireless has completed installing the necessary Lucent software into its switch.

Network Infrastructure Status for Ericsson Inc.

TTY Forum #21 Report

April 10, 2002

This report details the TTY Network Infrastructure status provided by Ericsson Inc. at the March 5th, 2002 TTY Forum 21. This report identifies development and testing status for network infrastructure products, release and general availability dates, efforts towards achieving compatibility with TTY devices, system testing, deployment activities, technical issues, and contact information.

Ericsson has completed the development of TTY technology intended for integration within its products. These products have been built to the approved ballot standards from the industry. The development testing has been completed for all of the Ericsson products, and the products have been demonstrated to the carriers in a number of test events within the FCC required deadlines. As products completed the development testing, they have been released to the carriers for acceptance testing. In general, the technical feasibility to transport TTY across the digital cellular systems has been proven by the product operability testing. Results have been published for TDMA, GSM and CDMA infrastructure demonstrations. Isolated technical flaws and system integration issues continue to be identified in the product test and carrier test phases.

Testing continues in development labs, in customer labs and in TTSI (ATIS sponsored) test events. While handset to infrastructure compatibility testing has taken place between several manufacturers, there is still an incurred risk to interoperability testing for manufacturers that have missed the initial testing. The current stage of testing includes base station to base station interoperability, base station to landline TTY, carrier infrastructure compatibility, and PSAP operability testing. Results obtained thus far are improving, yet remain inconclusive. Identifying and resolving the performance objectives will require the involvement and cooperation among the manufacturers, carriers, 911 PSAP facilities, standards organizations, and governing bodies. Ericsson continues to test TTY compatible products, participate and monitor the industry standards and test events, and work with the regulatory bodies and the ATIS Incubator. Ericsson Inc. is monitoring the data generated by TTSI to determine compliance to the FCC mandated <1% TTY character error rate.

1) Network Infrastructure Development:

TDMA Status:

TDMA network infrastructure has completed product development and testing of the Positron Express and Nokia handset interoperability problems. To fix the Positron problem, TDMA network infrastructure modified the bit duration of the regenerator from 21.5ms to 22ms for nominal and dropped to 21.625ms for the falling behind situation.

Also since last November more TTY compatibility tests have been conducted on the Motorola 60T. No problems were found. The results of the testing are similar to the tests carried out with other TTY handsets.

So far, the following handsets have been tested:

- Nokia Model # 6360
- Motorola Model # 60T
- Panasonic: EB-TX320 and EB-TX310
- Ericsson : T60d and T61d

The following equipment has been tested:

- Ameritech Q90
- Hitec Q90A Amplifier
- Ultratec Compact 600 001600
- Ultratec Intellemodem 2400
- 711 TTY Relay Service
- 911 PSAP using Positron Express

TDMA Plans:

The Ericsson TDMA infrastructure was verified in the Cingular Lab during the week of March 4th, 2002. The FOA was held in Houston starting on March 12, 2002. TDMA TTY software achieved General Availability status on April 3rd, 2002. Customer rollout is ongoing.

GSM Status:

The development code and products for the CTM node are complete. System verification is complete. The GSM infrastructure solution FOA'd with Cingular in December 2001 and January 2002. Software General Availability was achieved on February 25, 2002. Cingular has one live BSC operating with the TTY functionality while VoiceStream and AWS both have operating systems in their labs. Cingular, ATW and VoiceStream start rollouts in April, 2002.

GSM Plans:

The GSM TTY solution has undergone acceptance test at several customer sites. FOA testing was conducted with Cingular during December 2001 and January 2002 and General Availability was obtained on February 25th, 2002.

Rollouts for Cingular, VoiceStream and AT&T Wireless have begun. Cingular rollout will be complete by the end of April 2002 and VoiceStream rollout will be complete by end of May 2002. ATW rollout is still being planned, but will be completed prior to June 30, 2002.

CDMA Status:

Software code development for the network infrastructure solution is complete. Lab and integration tests are complete. The software was available for carrier testing on February 8, 2002. International TTY test calls between TTSI groups in the US and Brazil were successfully conducted on February 12, 2002.

The CDMA TTY solution software was modified according to IS-823A to adjust the nominal bit width of TTY signaling. The nominal TTY bit width was changed to 22 ms. The CDMA solution has also implemented the mute (half duplex) to prevent echoed character errors according to IS127-3. The TTY encoder will send TTY silence frames whenever the TTY decoder generates TTY tones.

2) Handset Development and Testing Plans;

Reported by Sony Ericsson.

3) Beta Testing and Lab Testing;

TDMA Infrastructure Beta Testing and Lab Testing

Testing of the Positron problem and TTY_Silence was completed on March 1st, 2002.

GSM Infrastructure Beta Testing and Lab Testing

Ericsson lab test is complete. Terminal and PSAP testing have completed successfully. Error rates of less than 1-% have been demonstrated.

To date, there are no outstanding technical issues.

CDMA Infrastructure Beta Testing and Lab Testing

The software was available for carrier testing on February 8, 2002. International TTY test calls between TTSI groups in the US and Brazil were successfully conducted on February 12, 2002. The customer FOA with Leap Wireless began on March 15, 2002 and is ongoing.

4) Release and General Availability to Carriers of Network Infrastructure Software;

The initial TDMA network software was declared General Availability (GA) on December 5, 2001. The new TDMA network software was declared GA on April 3, 2002.

The GSM System solution was declared General Availability (GA) with GSM R9.0, on February 25, 2002. Rollouts started in April 2002.

The CDMA System solution will be Generally Available (GA) with system Release 8.6 on May 28, 2002 and available for customer rollouts.

5) Availability to Carriers of Full Acceptance Test Units;

- *TDMA Network Infrastructure October 22, 2001*
- *New TDMA Network Infrastructure, March 4, 2002*
- *GSM Network Infrastructure November 30, 2001*
- *CDMA Network Infrastructure available February 8, 2002.*

6) Efforts Toward Achieving Digital Wireless Solution Compatibility with Enhanced TTY Devices.

Ericsson Inc. continues to work very closely with all other manufacturers and carriers on the TTY compatibility mandate.

7) Testing and Deployment Activities

Ericsson Inc. works with the operators/carriers in the test and deployment of network infrastructure systems. In addition, Ericsson Inc. works with the ATIS Incubator (TTSI) and participates in TTSI test events as scheduled.

Intra-infrastructure testing achieved good results while inter-infrastructure testing has encountered more challenges. There appears to be at least one inter-infrastructure interoperability issue still outstanding for GSM. Ericsson Inc. infrastructures for TDMA, GSM and CDMA were represented in the TTSI test event in February 2002, and GSM infrastructure is being represented in the April 2002 TTSI test event.

Ericsson CDMA successfully made a TTY call from Brazil to the TTY test site in Washington DC during the February 2002 TTSI test event. CDMA infrastructure is currently involved in Phase 3 regression testing.

Ericsson Inc. would like to express our appreciation for all of the test efforts and support we have received regarding TTY capability. Testing with operators, carriers, TTSI, Lucent, AWS, Cingular, DSPG, HITEC, Positron, and others contributed significantly to achieving the successes and results we have obtained so far.

8) Risks:

At the TTY Forum 21 meeting, the issue of major concern was the PSAP interoperability problem. The FCC has been petitioned by ATIS to investigate concerns of PSAP performance, which may affect the industry's ability to comply with the TTY deadlines. Ericsson has introduced corrections in our own TDMA implementation for problems detected early with PSAP manufacturers. The wireless industry is awaiting FCC response regarding this issue.

Several other issues remain to be resolved within the TTY capability.

Issues That Require Resolution:

- There are exposures with incomplete standards that need to be addressed.

- There is really no type approval test for TTY; there is no type approval agency. Without a type approval test, there is no test staging that validates the implementation.
- IS-823A bit exact changes should be created to adjust nominal bit width of TTY signaling. The nominal TTY bit width should be changed to 22 ms with a new mechanism proposed to handle consecutive character strings at minimum or maximum bit width tolerance.
- TTY silence frames require mute immediately after TTY characters, within IS-823A, to prevent echoed character errors.
- PSAPS need a test minimum performance specification to achieve the FCC mandated 1-% error rate.
- We are discovering interaction problems with other infrastructures that are only just now available and will require additional testing to be performed.
- V.18 interoperability testing at TTSI is inconclusive, additional testing is still required.
- The FCC should investigate an increased error rate benchmark for drive testing. Error rates similar to AMPS performance data collected within the TTSI database is recommended.

Please feel free to contact Stephen Hayes if you have any questions regarding this report, or wish to contact test or product interfaces. Please contact your local customer interface for product sales and marketing information.

Farmers Cellular Telephone, Inc.
TTY Report
April 8, 2002

- Network infrastructure software/hardware development and testing

Farmers Cellular Telephone, Inc.'s ("Farmers Cellular's") network consists of only one Nortel switch. We offer analog service as well as TDMA digital. Farmers Cellular has purchased the latest software upgrade from Nortel. Nortel Networks' development is complete, and product tests have been completed as well. Nortel tested with Panasonic prototypes. (Other handset vendors were not available during Nortel's NBSS10.1 test cycle).

- Handset development and testing plans

Farmers Cellular handset vendor status: Ericsson is on schedule. Motorola has not given an update, and Nokia is on schedule.

- Schedule for deployment of the software/hardware in the Farmers Cellular switches

The minimum baseline software requirement for this feature to be deployed in Farmers Cellular switches is MTX10 or higher. Software has been installed on Farmers Cellular switch.

- Beta testing and lab testing

Turbocode/ HiSpeed is a proprietary feature on Ultratec/Ameriphone TTY device and is not supported by TDMA standards. If TDMA standards are enhanced to support these devices, Nortel will support this in a future release. However, standards are designed to avoid supporting propriety methods and there is no known effort to standardize the propriety features.

- Release and general availability to carriers of network infrastructure software

Under Nortel's recommendation, Farmers Cellular will engage the chosen TDMA TTY handset vendor during network testing to do interoperability testing with the Nortel Networks solution.

- Plans to test with the Public Safety Community (PSAP's)

Farmers Cellular will schedule this testing with the PSAP centers during its network testing. Farmers Cellular will work with Nortel to identify PSAPs that would be willing to test an end-to-end solution.

- Carrier Testing activities

Testing will begin upon receipt of software.

- Retail Availability

Farmers Cellular is dependent upon the availability of handsets from vendors.

- Geographic scope of network infrastructure deployment

Farmers Cellular will test the four PSAPs in our geographic area when the software is available.

Farmers Cellular remains committed to meeting the FCC's tentative mandate to provide E911 TTY access to our network. The software to support IS-823 has been delayed, but Nortel's newly-scheduled release date should still allow compliance. Nortel will not support 50-baud TTY for their first release.

Leap Wireless
Cricket Communications

TTY Status Report
April 9, 2002

Leap provides Cricket wireless service using CDMA digital technology in 40 markets in 20 states. Leap uses three infrastructure switch vendors: Lucent, Ericsson and Nortel. Leap intends to meet the June 30, 2002 compliance date for TTY/911 compatibility. While the majority of network upgrades have been completed, neither network nor handset testing has been initiated. We expect that testing will be completed prior to the June 30 compliance date.

Network Infrastructure

Upgrades to the Lucent and Nortel portions of Leap's network are complete.

Ericsson Release 8.6 is scheduled for the end of April.

Handsets

TTY-compatible Nokia handsets will be available for sale in every Cricket market.

Midwest Wireless Holding L.L.C
TTY Status Report
March 28, 2002

Background

Midwest Wireless Holdings L.L.C. is a rural wireless carrier that operates TDMA digital cellular service in its Minnesota, Iowa and Wisconsin markets. Midwest must rely on its switching vendor, Nortel Networks, to provide the necessary switch software, and the capabilities of our two primary handset providers Nokia and Motorola, in order to meet compliance requirements.

Status

Midwest Wireless reported in its status reported dated December 19, 2001, that it would not be in compliance with the 12/31/01 software capability deadline because it would not be able to install the required switch software until late 1st or early 2nd qtr. 2002. The Nortel load (MTX 10), that contains the compliant software, is currently scheduled for installation at the end of May 2002.

We have been informed the Nokia 6360 TDMA handset, which will support the digital TTY mandate, and has been tested in the Nortel lab for compliancy, will be generally available in April 2002. Midwest Wireless has that model on hand, and will test compliance in its network immediately following the installation of the MTX 10 software load.

Midwest Wireless plans to be compliant by the deadline, provided no unforeseen problems occur during the network testing phase.

Respectfully submitted
Gary Christopherson
Director, External Relations & Regulatory
507-385-2597

April 9, 2002

Via Electronic Mail and Federal Express

Ed Hall
The Alliance for Telecommunications Industry Solutions
1200 G Street, NW
Suite 500
Washington, DC 20005

Dear Mr. Hall:

Motorola is pleased to submit a status report related to our efforts at attaining TTY compatibility with our digital phones and infrastructure. Motorola is a domestic supplier of cellular handsets in TDMA, CDMA, GSM, and iDEN technologies. We also provide infrastructure equipment in CDMA and iDEN technologies.

We are working closely with our carrier customers to provide them with the equipment necessary to meet the Federal Communications Commission's June 30, 2002 TTY deployment deadline. At this time, we are on track to enable these carriers to meet their obligations.

The attached report is provided to the TTY Forum for its report to the Commission for the first quarter of 2002. Please contact me at the number below if you have any questions.

Regards

Alfred R. Lucas
Vice President and Director
Office of Access Excellence
Motorola
Voice: 561-739-2505
TTY: 561-730-2506

Enclosure

MOTOROLA

TTY COMPATIBILITY DEVELOPMENT STATUS REPORT

1st Quarter 2002

Product	Standard	Status	Milestones	Progress
CDMA Handset	IS 127-3 IS 733-2	Carrier Testing	IOT: June 2001 UI: October 2001 ROM: December 2001 SA: May 2002	Handsets tested on Motorola and Lucent infrastructure. Testing planned on Nortel infrastructure. Tests on handsets conducted by two carriers.
GSM Handset	TS 26.226 TS 26.230 TR 26.231	Carrier Testing	UI: October 2001 IOT: October 2001 ROM: January 2002 SA: June 2002	Handsets tested on Ericsson, Nortel, & Siemens infrastructure. Tests conducted by one carrier; additional carrier testing planned in 2 nd quarter.
iDEN Handset		Carrier Testing	Production handsets available to carriers	Handsets tested by Carrier during December 2001 FOA. Handset work complete.
TDMA Handset	IS 823-A IS 840-A	Carrier Testing	IOT: September 2001 UI: September 2001 ROM: October 2001 SA: April 2002	Handsets tested on Ericsson and Nortel infrastructure. Handsets tested by two carriers. PSAP testing scheduled in April.
CDMA Infrastructure	IS 127-3 IS 733-2	Carrier Testing	FOA Jan 02 Software release available	Infrastructure software tested with handsets from six manufacturers. Carrier testing underway.
iDEN Infrastructure		Carrier testing and deployment	Production software available to carriers	Carrier FOA complete. Infrastructure software ready for carrier roll-out.

Note: Motorola works with its carrier customers to provide them specific information related to their respective products.

Note: IOT is Inter Op Testing with RAM based parts for Character Error Rate testing
 UI is User Interface testing with HCO / VCO support
 ROM is the availability of ROM based phones. These should be functionally identical to a RAM phone.
 SA is Ship Acceptance of production volume quantities

Al Lucas
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